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CLAIMS:

What is claimed is:

1. A method of establishing a connection between a
5 first node and a second node in a system area network,
comprising:
allocating a virtual connection unit pair to the
connection, the virtual connection unit pair being
associated with the first node;
10 establishing the connection between the virtual
connection unit pair of the first node and a connection
unit pair of the second node; and
transmitting one or more messages between the first
node and the second node over the connection using the
15 virtual connection unit pair.
2. The method of claim 1, wherein the connection unit
pair is a queue pair.
- 20 3. The method of claim 1, wherein the connection unit
pair is an end-to-end context.
4. The method of claim 1, wherein the virtual
connection unit pair has only a virtual connection unit
25 pair identifier and an availability bit.
5. The method of claim 1, wherein allocating a virtual
connection unit pair to the connection includes:
selecting the virtual connection unit pair from a
30 virtual connection unit pair pool; and
associating a virtual connection unit pair
identifier of the virtual connection unit pair with a

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physical connection unit pair of the first node.

6. The method of claim 1, further comprising:

tearing down the connection between the first node
5 and the second node, wherein tearing down the connection
includes placing the virtual connection unit pair in a
time-wait state.

7. The method of claim 6, wherein a physical connection
10 unit pair associated with the first node is not placed in
a time-wait state.

8. The method of claim 6, wherein a physical connection
unit pair associated with the first node is used to
15 establish another connection while the virtual connection
unit pair is in the time-wait state.

9. The method of claim 6, wherein placing the virtual
connection unit pair in a time-wait state includes
20 setting an availability bit associated with the virtual
connection unit pair.

10. The method of claim 5, wherein the virtual
connection unit pair is selected from virtual connection
25 unit pairs in the virtual connection unit pair pool that
are not in a time-wait state.

11. A computer program product in a computer readable
medium for establishing a connection between a first node
30 and a second node in a system area network, comprising:
first instructions for allocating a virtual
connection unit pair to the connection, the virtual

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connection unit pair being associated with the first node;

second instructions for establishing the connection between the virtual connection unit pair of the first

5 node and a connection unit pair of the second node; and

third instructions for transmitting one or more messages between the first node and the second node over the connection using the virtual connection unit pair.

10 12. The computer program product of claim 11, wherein the connection unit pair is a queue pair.

13. The computer program product of claim 11, wherein the connection unit pair is an end-to-end context.

15 14. The computer program product of claim 11, wherein the virtual connection unit pair has only a virtual connection unit pair identifier and an availability bit.

20 15. The method of claim 11, wherein the first instructions for allocating a virtual connection unit pair to the connection includes:

instructions for selecting the virtual connection unit pair from a virtual connection unit pair pool; and

25 instructions for associating a virtual connection unit pair identifier of the virtual connection unit pair with a physical connection unit pair of the first node.

30 16. The computer program product of claim 11, further comprising:

fourth instructions for tearing down the connection between the first node and the second node, wherein the

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fourth instructions for tearing down the connection include instructions for placing the virtual connection unit pair in a time-wait state.

5 17. The computer program product of claim 16, wherein a physical connection unit pair associated with the first node is not placed in a time-wait state.

10 18. The computer program product of claim 16, wherein a physical connection unit pair associated with the first node is used to establish another connection while the virtual connection unit pair is in the time-wait state.

15 19. The computer program product of claim 16, wherein the instructions for placing the virtual connection unit pair in a time-wait state include instructions for setting an availability bit associated with the virtual connection unit pair.

20 20. The computer program product of claim 15, wherein the virtual connection unit pair is selected from virtual connection unit pairs in the virtual connection unit pair pool that are not in a time-wait state.

25 21. An apparatus for establishing a connection between a first node and a second node in a system area network, comprising:

30 means for allocating a virtual connection unit pair to the connection, the virtual connection unit pair being associated with the first node;

means for establishing the connection between the virtual connection unit pair of the first node and a

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connection unit pair of the second node; and

means for transmitting one or more messages between the first node and the second node over the connection using the virtual connection unit pair.

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22. The apparatus of claim 21, wherein the connection unit pair is a queue pair.

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23. The apparatus of claim 21, wherein the connection unit pair is an end-to-end context.

24. The apparatus of claim 21, wherein the virtual connection unit pair has only a virtual connection unit pair identifier and an availability bit.

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25. The apparatus of claim 21, wherein the means for allocating a virtual connection unit pair to the connection includes:

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means for selecting the virtual connection unit pair from a virtual connection unit pair pool; and

means for associating a virtual connection unit pair identifier of the virtual connection unit pair with a physical connection unit pair of the first node.

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26. The apparatus of claim 21, further comprising:

means for tearing down the connection between the first node and the second node, wherein the means for tearing down the connection includes means for placing the virtual connection unit pair in a time-wait state.

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27. The apparatus of claim 26, wherein a physical connection unit pair associated with the first node is

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not placed in a time-wait state.

28. The apparatus of claim 26, wherein a physical
connection unit pair associated with the first node is
5 used to establish another connection while the virtual
connection unit pair is in the time-wait state.

29. The apparatus of claim 26, wherein the means for
placing the virtual connection unit pair in a time-wait
10 state includes means for setting an availability bit
associated with the virtual connection unit pair.

30. The apparatus of claim 25, wherein the virtual
connection unit pair is selected from virtual connection
15 unit pairs in the virtual connection unit pair pool that
are not in a time-wait state.

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